

WHAT IS CLAIMED IS:

1. An imprinting material for use in imprint lithography comprising:

a composition having a viscosity associated therewith and including a surfactant, a polymerizable component, and an initiator responsive to a stimuli to vary said viscosity in response thereto, with said composition, in a liquid state, having said viscosity being lower than about 100 centipoises, a vapor pressure of less than about 20 Torr, and in a solid cured state a tensile modulus of greater than about 100 MPa, a break stress of greater than about 3 MPa and an elongation at break of greater than about 2%.

2. The imprinting material as recited in claim 1 wherein said surfactant comprises a non-ionic surfactant.

3. The imprinting material as recited in claim 1 wherein said surfactant comprises a fluorinated surfactant

4. The imprinting material as recited in claim 1 wherein said surfactant comprises a fluorinated non-ionic surfactant.

5. The imprinting material as recited in claim 1 wherein said monomer is selected from a set of monomers consisting essentially of epoxies, acrylates, methacrylates and vinyl ethers.

7. The imprinting material as recited in claim 1 wherein said monomer is selected from a set of polymerizable component containing silicon therein.

8. The imprinting material as recited in claim 1 wherein said monomer is a substituted acrylate.

9. The imprinting material as recited in claim 1 wherein said monomer is a silicon-containing acrylate.

10. The imprinting material as recited in claim 1 wherein said monomer is selected from a set of substituted acrylates consisting essentially of mono-substituted acrylates and multifunctional-substituted acrylates.

11. The imprinting material as recited in claim 1 wherein said initiator is selected from a set of initiators consisting essentially of photo initiators and thermal initiators.

12. The imprinting material as recited in claim 1 wherein said initiator is selected from a set of initiators consisting essentially of radical photoinitiators.

13. The imprinting material as recited in claim 1 wherein said viscosity in said liquid state is less than about 25 centipoises.

14. The imprinting material as recited in claim 1 wherein said viscosity in said liquid state is less than about 10 centipoises.

15. The imprinting material as recited in claim 1 wherein said viscosity in said liquid state is less than about 5 centipoises.

16. The imprinting material as recited in claim 1 wherein said vapor pressure is lower than about 5 Torr.

17. The imprinting material as recited in claim 1 wherein said vapor pressure is lower than about 2 Torr.

18. The imprinting material as recited in claim 1 wherein said tensile modulus is 100 MPa or greater.

19. The imprinting material as recited in claim 1 wherein said break stress of about 3 MPa or greater.

20. The imprinting material as recited in claim 1 wherein said elongation at break is 8% or more.